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ABSTRACT

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ON THE PRODUCTION OF COMPARATIVE STRUCTURES IN CHILD SPEECH[1]

Virginia C. Gathercole

Abstract: Two children's spontaneous utterances containing the comparative structure are examined for their semantic content. Many comparatives are found to encode the notion 'A has property X,' and this use is often found in reference to the presence of X to an extreme, rather than a non-extreme, extent. The uses of the comparative are analyzed in relation to the same two children's uses of too X for 'A is (very) X' and of simple adjectives to encode 'A is X enough.' It is shown that the findings reported for these structures correlate well with data found in previous studies on the comprehension of the comparative and similar structures.

In current child language research, one of the most extensively studied areas of investigation, and one in which many questions still remain unanswered, is that of the acquisition of relational structures (i.e., comparative constructions and the like). There is an enormous body of literature on the acquisition of more and less in English (Donaldson and Balfour 1968, Donaldson and Wales 1970, H. Clark 1970, Palermo 1973, Griffiths, Shantz, and Sigel 1967, Weiner 1974, Trehub and Abramovitch 1977, Carey 1977). There are also studies on the acquisition of comparatives marked by -er (Wales and Campbell 1970, Townsend 1974, Townsend and Erb 1975, Nelson and Benedict 1974), which is related suppletively to more and less.

However, in the studies of more and less and the -er comparative, the primary or sole emphasis has been on children's comprehension. Little information has been brought forth pertaining to the production of relational structures in child speech. Such complementary data on production are indispensable. In any area of child language, we can gain a clear picture of the child's linguistic competence only by examining both comprehension and production (Chapman and Miller 1975, de Villiers and de Villiers 1973, Gathercole 1977, Keeney and Wolfe 1972). But what is more important for these forms is that the contexts which allow comparatives often also allow related structures, such as simple adjectives, superlatives, and intensified adjectives. This makes it especially difficult to evaluate children's responses to any of the relational structures in comprehension studies without an awareness of the uses of these same relational structures in production.

In this paper, therefore, I would like to present data on spontaneously produced comparatives. I will analyze errors involving comparatives and explore the relationship of these errors to errors involving other structures closely related to the comparative. Finally, I will comment on the relevance of the production errors to the findings of

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comprehension studies reported in the literature.

Data

The production data reported on here are primarily taken from my children, Jaime[2] and Rachel, and are supplemented with data collected from other children.[2] In this paper we will only consider the early semantically-related errors that are relevant to the comparative.

Analysis

When we look at the children's early utterances containing comparatives, it strikes us that in many cases, the child is attempting to express an idea that would have been better expressed with one of three or four different structures available in English. Some utterances appear to mean something like 'as . . . as' or 'A is X like B.' Examples are given in Table 1, numbers 5 to 8. Other comparatives appear to encode a meaning adults encode with the simple adjective ('X') or an intensified adjective ('very X'), and the comparative sometimes occurs in explicit alternation with one of these adjectival structures. Examples can be found in Table 1, numbers 9 to 20. Occasionally the comparative appears to mean 'too X,' as in examples 21 and 22 of Table 1. Still other comparatives occur with a clause beginning with to, or occasionally with enough, to encode a concept like 'X enough.' Examples are numbers 23 to 26 in Table 1.

Early utterances with comparatives thus appear to encode several different concepts. In order to gain a better understanding of these utterances, we can draw on insights that have been gained in recent years in studies on the acquisition of word meaning (Bowerman 1977, 1978, Carey 1978). It has been convincingly argued that the child first learns a word in connection with an appropriate prototypical referent, and then overextends that word on the basis of one or more of the features that are present in the prototype (Bowerman 1978). The overextension is not always limited to a single feature, but rather might occur non-systematically on the basis of any of the features of the prototype (Bowerman 1978).

Transferring the notion of overextension based on prototype features to comparatives, one might expect the child to first use a limited number of comparatives correctly, learned as prototypes, and then to extend the use of the comparative structure to situations in which only one, or an incomplete subset, of the conditions necessary for the use of the comparative structure was present.

What are those criterial conditions for the use of the comparative? A comparative like John is taller (than Tom) expresses a relation between two (sets of) objects. That relation is one in which some characteristic X (here, tallness) is considered to be present in object A to a greater, or lesser, degree than in object B. We can schematize a comparative relationship as in 1.

1. $X(A) \gtrless X(B)$

Table 1

Examples of spontaneously produced comparative utterances

(R=Rachel, J=Jaime, M=Mother, D=Father. J is older than R by 2 years, 3 months. Ages are given in years; months.)

(a) Examples in which the comparative appears to have been used appropriately:

1. R 2;9 My hand's taller than yours. (R holding her arm out next to M's. Her arm's "longer than" M's?)

2. R 2;9 Look -- I'm bigger than Jaime. I'm tallest (than?) Jaime. I'm taller. (R standing on her tip-toes. J is 5;0.)

3. R 3;2
M: That dress is too big.
R: I'll get a littler one.
(M dressing R.)

4. R 3;5 You're prettier than me, 'cause I smile not harder than you. (i.e., "'cause I smile less hard than you." R conscious about smiling because M had bought J's school pictures, but not R's because she wasn't smiling in the picture.) (Note that the previous 3 utterances in (a) could be interpreted as falling into one of the other groups of utterances in Table 1, depending on whether R's intended meaning in each case was really comparative or not. However, this utterance can only be understood as having been intended as a comparative by R.)

(b) Examples in which utterances with the comparative encode 'A is as X as B' or 'A is X like B.'

5. R 3;0
R: His hat's bigger.
M: It's bigger than what?
R: His hat's bigger than my coats.
(R referring to inflated Santa Claus's hat. Santa is standing in R's room, and his hat reaches as high as the coats that are hanging in her closet. R means something like "big (high) like my coats.")

6. R 3;2
R: My shoes are littler than my feet.
M: Are they gonna fit your feet?
R: Yeah.
(In discussion, R kept to her contention that her shoes were "littler than" her feet and would fit her feet. Means "little like" her feet.)

Table 1 (continued)

7. R 3;7 (comprehension)
(R and M playing with 8 graduated rings, arranged in a line according to size.)
...
M: Which one's littler than this? (M pointing to third largest ring.)
R: That's big! These are littler (R pointing to the smallest 3), and these are bigger (R pointing to the other 5). (R understood M's question to mean something like "Which one's little like this one?")

8. J 3;11 J: I'm littler than Rachel, right?
M: No, Jaime.
J: Bigger. Mickey Mouse is littler than Rachel.
(J is sitting on Rachel's (1;8) high chair. Mickey Mouse refers to a mouse on the pajamas R is wearing. J apparently means, in the first utterance, "I'm little like Rachel." When M objects, J revises his statement to an appropriate comparative. It is possible, though unlikely, that in the first utterance J only incorrectly chose the marked adjective "little" instead of an intended unmarked "big.")

(c) Examples in which utterances with the comparative encode 'A is (very) X.'

9. R 3;6 Hey! I got two prettier shirts!
(R has taken one of her favorite shirts out of her drawer to put it on. When asked about "two" R referred to a shirt that she wore home from school, after getting her other clothes wet at school. She had forgotten about the shirt at school and has decided that she likes it a lot. No intended comparison apparent.)

10. R 3;7 Two big ones. Two bigger ones. Two big ones.
(R asking to have crackers after supper. No crackers in sight.)

11. R 3;7 All those are larger. Those two are smaller.
(R referring to eight graduated rings in a line according to size. "All those" refers to largest six rings; "those two" refers to smallest two. Possibly a comparative. More likely that R meant "large" and "small," since there is no possible standard of comparison outside of those rings included in either "larger" or "smaller.")

Table 1 (continued)

12. R 3;7 Here's a long, long, longer noodle.
(R pulling noodle out straight on table. No comparison apparent. Reduplication was a common means of intensification.)

13. R 3;7 I don't get better gloves, but you do.
("good"? As M gets out R's and M's gloves. When questioned further, R asserts that M's are better because they're black, makes no reference to her own in explanation.)

14. R 4;1 (R and M discuss length of R's fingers. M remarks that they aren't all the same length.)
R: This one's longer. (pointing to middle finger)
M: What is it?
R: Taller . . . no, longer.
See, this one's smaller. (pointing to pinky)

15. R 4;7 That's littler and that's taller.
(Re: two glasses almost exactly the same height, but very different in diameter. After M writes above down, R asks M what M has written. M reads it, and R corrects herself by substituting very:)
R: very tall.
M: and is that very little?
R: Yeah, and that's very taller. Look how big that is. Can you see how tall it is?

16. J 3;9 Did you hear the band? Big bands go louder, right?
(J heard the big university band practicing on the playing field all the way at our apartment a block away, because they were playing so loudly.)

17. J 3;10 I'm not jumpin' off the table louder. I'm jumpin' off the table softly.

18. J 4;0 I did it faster. Rachel didn't do it faster. She didn't want to do it faster.
(J drank up his milk quickly; R still has some left. "fast"? "faster than Rachel/me"?)

19. J 4;3 Gin, don't go slower. I went fastest.
(J has run to cupboard where bandages are, wanting M to hurry to where he is to get the bandages out. "don't go slow"?)

20. Amy 4;0 This dress spins around. It's a faster dress.
(As Amy spins around and gleefully notices how far her dress blows out while spinning around.)

Table 1 (continued)

(d) Examples in which utterances with the comparative appear to encode 'A is too X.'

21. R 3;6 Don't make this tighter.
(R trying to open pickle jar lid. She finds she can't open it.)
It's tighter!
("too tight" or "very tight")

22. Christy 2;0 M: Do you like your new shoes?
C: Yeah! They're not bigger.
("too big"?)

(e) Examples in which utterances with the comparative appear to encode 'A is X enough.'

23. J 4;1 This one can't open stronger enough.
(J making an unsuccessful attempt to open an unopened gallon of milk. i.e., "I'm not strong enough to open this.")

24. R 2;10 R: I'm not stronger to do that.
J: If you were stronger, you could do it, Rachel.
(Re: cracking walnuts. R trying, but not able to crack them. J is 5;1.)

25. R 2;10 See. I was stronger to put that comb up.
(R has put comb up on chest of drawers.)

26. Eva 2;3 I'm bigger to stand up now.

In some cases, a comparative can be easily seen to include the proposition that A actually has characteristic X to some degree. These are cases in which categorical adjectives (as defined by Nelson and Benedict 1974) occur, such as furry or red. The comparative will not be used with such adjectives unless at least one of the objects being compared has the characteristic in question to some degree (Huttenlocher and Higgins 1971, p. 494). For example, it is not possible to say 2 or 3,

2. John's face is redder than Tom's.
3. Your coat is furrier than mine.

if John's face is not red at all, and if your coat is not furry at all.

With some other adjectives, in particular common relative polar opposites (like tall/short), it is not so clear whether the comparative

contains a similar proposition that 'A is X to some degree.' Some investigators have argued (H. Clark 1970, Huttenlocher and Higgins 1971) that in order to say a sentence like 4, it is not necessary that either object referred to in the comparison have the feature denoted by the adjective at all. Note that you could follow 4 with sentence 5.

4. This pencil is longer than that one.
5. But they're really both very short.

Huttenlocher and Higgins (1971) comment that comparatives using such adjectives show

> only that both items can be evaluated with respect to the dimension to which those adjectives belong. . . . [The] two items can be compared using either of the two polar adjectives, no matter where the items are located along a dimension. . . . (pp. 493-494)

The reason for this phenomenon with the comparatives of common relative adjectives lies in the fact that relative adjectives are themselves implicitly comparative (Sapir 1944, Huttenlocher and Higgins 1971). That is, rather than expressing simple properties, as categorical adjectives like furry do, such adjectives are better characterized as relations.

> That is to say, in order to verify that some x is tall, one must test whether the height of x is greater than some value y that characterizes the expected height of things like x. (Miller and Johnson-Laird 1976, p. 324)

The expected values for the two poles of a relative scale vary according to the set of referents to which the scale is applied (Nelson and Benedict 1974, Huttenlocher and Higgins 1971, Sapir 1944).

When a simple relative adjective is used (long), the placement of the relative scale is determined by the norm for the class of objects to which the object being compared belongs. I.e., in a sentence like 5, the long/short scale is adjusted to fit the norm for pencils in general. In the context of all pencils, the two pencils both fall nearer the [-Pole] end of the scale.

However, in a comparative of a relative adjective (longer), the standard of comparison ceases to be the norm for the class. The norm instead becomes whatever is explicitly stated or implicitly understood from the context as the standard. In a sentence like 4, the context to which the long/short scale is applied is not the whole class of pencils, but is that of the two pencils of the comparison. In this context, the shorter of the two pencils falls nearer the [-Pole] end of the scale, and the longer nearer the [+Pole] end.

Thus, we could say, on the one hand, as many have, that the comparative of relative adjectives does not entail the proposition that 'A is X,' but that the simple form (A is X) is implicitly comparative -- A is

X-er than the norm for the class of things that include A. Or, on the other hand, we could say, more consistently, that, just as for categorical adjectives, the comparatives of relative adjectives entail 'A is X to some degree.' The important difference is that, since there are no absolute standards for the placement of the end poles of common relative adjectives, the context determines the placement of the objects relatively nearer the positive or the negative pole of the scale. For the simple forms, the context will be the whole class of objects to which the object being compared belongs; for the comparative forms, the context is narrowed down to what is explicitly or implicitly understood as the standard of comparison.

Thus, we could define the minimum criterial conditions for the use of the comparative structure as in 6:

6. a. A is related with B on the basis of feature X.
   b. A is X to a greater degree than B.
   (→ A is X to some degree.)

Let us return now to the children's uses of the comparative. As in the case of prototypical uses of words before they are overextended, we do find some early uses of the comparative that appear, by the adult standard, to be appropriate -- e.g., numbers 1 to 4, Table 1. Other uses of the comparative, as found in Table 1, numbers 5 to 20, can be seen as uses in which only one, or a subset, of the necessary conditions for the use of the comparative is present. Utterances 5 through 8 share the single criterion of comparison of one object with another on the basis of a feature X [6.a.]. They do not share with the adult use of the comparative the criterion of different degrees of the presence of the feature X, or the necessary grading of feature X. Utterances 9 to 20 encode the proposition that 'A is X' or 'A is very X' [implication of 6.b.]. This use of the comparative lacks the criterion that the comparative must also encode a relation between one object and another on the basis of that feature.

The inappropriate use of a comparative due to the presence of only a subset of the criteria for the use of the comparative does not directly account for utterances like 21 through 26. In numbers 21 and 22, the comparative appears to be used like <u>too X</u>. The meaning of <u>too X</u> can be seen to involve two conditions. First, as for the comparative, the object being considered must display the feature X to some degree or to a great degree. Note that the same arguments about relative polar opposites apply here as they do for comparatives. (That is, in saying a sentence like 7,

7. This ball is <u>too big</u> for the baby to hold.

the object referred to (here, a ball) can be said to have the feature in question (here, bigness) in the restricted context stated in 7, even if in a more general context we might assert that that same ball is 'little.') The second condition for the use of <u>too X</u> is that there is a desired size or degree, an upper limit, which has been surpassed.

It is of interest that many early uses of <u>too X</u> encode intensification. Examples of these can be found in Table 2, numbers 3 through 18.

Table 2
Examples of spontaneous utterances using too X

(a) Examples in which too X appears to have been used appropriately.

1. R 2;11 There was too much toys in my purse.
(Toy "Cookie Monster" fell out of R's purse. Purse full of toys.)

2. J 3;8 It's not a too big one.
(Re: a small rock that J has found. J had previously seen a very large rock and asked M if he could take it up on the porch, and M had told him that it was too big to take up.)

(b) Examples in which too X encodes 'very X.'

3. R 3;3 Put that in my place 'cause it's too little.
(R getting out spoons for dinner. Handing M a very little spoon that she chose for her own use.)

4. R 3;6 I'm too high, Daddy.
(R standing on table to turn light on, can barely reach light switch.)

5. R 3;6 J: Look how long our train is.
R: It's too long, right?
("very." Both J and R eager to make the train they are putting together as long as possible.)

6. R 3;6 ...too many kids!
(Lots of kids came to door together for Halloween. R said something about there being "too many kids," or they have "too many kids." When asked why, R looked puzzled, then added something like "they have a baby.")

7. R 3;6 R: That's top drawer, too. (R pointing to drawer second from top in chest with 5 drawers)
That's top and this is top. (Re: second from top and top drawers)
These two are the top drawers. (R pointing to top two)
These three are the bottom drawers. (R pointing to the lower three)
M: Is there a middle drawer?
R: Oh no! This is the middle drawer. (R pointing to middle drawer)
...
These two are the middle drawers. (R pointing to second and third drawers from top)
M: (testing) Where's the one that's too high?
(R points to top drawer.)
M: Where's the one that's too low?

Table 2 (continued)

7. (continued) (R points to bottom drawer.)
R: It's too short. I'm too big. See how long I am? You know what big means? Long.

8. R 3;7
R: Can you reach it?
M: No.
R: Are you too little?
M: Yeah.
R: Are you too big? You're not too little! Look at you!
(R wanting R or M to get pitcher off a very high cabinet. First too little appropriate. Second too little as if R has heard what she has said, reinterprets it as "very little.")

9. R 4;2
I was too strong to open it. I was strong enough to open it. (R opened package or something.)

10. J 3;3
Put it too close.
(J asking M to move a bowl of candy closer to him.)

11. J 3;10
They're too loud.
(Re: windshield wipers squeeking. No sign that J dislikes the level of noise they are making.)

12. J 3;9
J: Daddy and me are magician fixer.
M: What does a magician fixer do?
J: It fixed the toilet and the books. Because Mr. Kean fixes his toilet too. I'm a little fixer, and he's (=D) a too big fixer. He fixes big books and I fix little books.
(J and M repairing books. D has recently fixed the toilet. Mr. Kean is a magician at school.)

13. J 3;9
Now I can jump too loud because Jorge's up, right?
(Jorge is a little boy who lives downstairs from us. Presumably, M had told J not to jump too loud because Jorge was sleeping.)

14. J 3;9
J: These are Amy's shoes.
M: They were Amy's shoes. Now they're yours. They're too little for Amy.
J: Are my feet too little?
M: No, the shoes are just right for you. The shoes are too little for Amy.
J: (confused) but not for me?
(Re: pair of hand-me-down shoes.)

Table 2 (continued)

15.	J 4;1	M: These shoes are too big for these boots. J: Well the boots are too big, too.
16.	J 5;0	D: Doesn't look like they'll be needing too many more. J: (protesting) I'll need too many more. (D teasing about not giving J and R more cookies or something.)
17.	Jeremy @ 4;0	Jeremy: Rachel, I like it and I have too much. R's M: Can you eat it all, Jeremy? Jeremy: Yeah. (Re: some food Jeremy is eating for lunch.)
18.	Doug @ 5;0	It's just that I'm going to eat too much at suppertime. (Doug explaining why he hasn't taken much food on his plate for lunch.)

Note that the meaning 'very X' is perfectly appropriate for too X and is probably the primary reading, when too X is within the scope of a negative, as in 8.

8. The prince wasn't too happy about his daughter's marrying a commoner.

Notice how in number 16 of Table 2 this is the meaning of too many more in Jaime's father's negative utterance, but it is not appropriate in Jaime's affirmative response.

Since the children are using too X to a large extent for intensification, it is possible that comparative utterances like 21 and 22 in Table 1 are intended not as 'too X' but merely as intensified adjectives. If the criterion of there being a surpassed upper limit is not met in the children's uses of too X, it is probable that the child does not intend to express the surpassing of an upper limit in the comparative utterances either.

In Table 1, we also found utterances in which the comparative was used to encode 'X enough' (23 to 26). There are comparable expressions used by these children in which the simple adjective or an intensified adjective occurs. See examples in Table 3. The unmodified adjective followed by a clause beginning with to is a very common means of encoding the child's apparent intention to express a concept similar to that encoded by X enough. Since the comparative is often used to encode the unmodified adjective or an intensified adjective, as in utterances like 9 through 20 in Table 1, then the use of the comparative in sentences where X enough would have been the adult-like form is merely an extension of the use of the simple adjective to encode this concept.

To summarize the data, the comparative is used in early utterances

Table 3
Examples of spontaneous utterances using simple adjectives for "X enough"

1. R 2;10 I'm strong to get my toothbrush.
(R standing on toilet in order to reach her toothbrush in stand.)

2. R 5;2 They're pretty for the secret club; they're pretty enough for the secret club.
(R about to put on slipper socks to go play in a "secret club" the children have formed.)

3. J 3;9 This is too big for my pocket, right? My pocket's for little things, right? My fireman's little. It's little for my pocket, right? My hand's little for my pocket, right?
("This" = a big coloring book J is carrying. J's "fireman" refers to a little Fisher-Price type doll.)

4. J 3;10 I'm strong to carry it.
(J picking up toy xylophone to put it away.)

5. J 4;3 I'm strong to put the typewriter in.
(J asserting that he can put typewriter in its case as he struggles to do so.)

6. J 4;3 These socks are very big for me.
(J pleased that the socks he has just put on fit him nicely. J means "they are the right size" for him -- i.e., "big enough"?)

7. Amy 4;0 I'm a big girl to do it.
(Amy unbuttoning sweater, proud that she is succeeding.)

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sometimes appropriately, and sometimes inappropriately to compare two objects that share a feature X, or to state the presence, often to a great extent, of a feature X in an object A. Inappropriate uses of the latter type are the more prevalent type of error in the data. (Note that both types of errors show a lack of a notion of the grading of the feature in question. I.e., the 'greater than' relation is lacking.)

Other studies

Let us compare the findings just summarized with what is reported in the literature on children's comprehension of comparatives. On the basis of children's responses to questions in comprehension tests of

more/less and of the -er comparative, H. Clark (1970) has argued that comparatives are at first used nominally. That is, more means 'some,' and a sentence like Tom is 4 years younger than Dick means 'Tom is four years of age' (p. 273). Clark further claims that a second stage of development is one in which the best exemplar of a dimension is for the child an object with the most extent, such that the best exemplar of 'some' (more) would be the item with very much, and the best exemplar of X would be the object that is very X. Clark's hypothesis is not necessarily tied to the contention that both less and more at first mean 'some,' since Weiner (1974), who gives evidence that children do not confuse more and less, also suggests that there is a stage at which more means 'a lot.'

Indeed, there are indications in studies on the -er comparative that children respond to comparative questions at an early stage by choosing the object which exemplifies the quality in question to the greatest extreme. In Wales and Campbell's (1970) study, 3- to 5-year-old children appear to start out responding to comparatives by choosing the extreme item. There is evidence that the development of the realization that a comparative is infinitely applicable coincides with a movement away from a heuristic of choosing the extreme exemplar of the feature in question. Wales and Campbell believe that this is not the case. However, if we look at the figures in their Table 7 (p. 385), summarized in Table 4, we see a preponderance of extreme choices when only the first comparative choice of two comparative questions was correct. There is at least an absence of this imbalance when the child responded correctly to both comparative questions in their study.

	Extreme choice	Non-extreme choice
One choice correct	92	38
First choice of two correct choices	65	85

Table 4

Data from Wales and Campbell's (1970) study. Total (of 3 groups of children) of extreme and non-extreme choices as responses to the first comparative question when there was only one correct choice and when there were two correct comparative choices.

(Adapted from Wales and Campbell 1970, p. 385, Table 7)

In other studies conducted by Townsend (1974) and Townsend and Erb (1975), the most prominent response of 3- to 5-year-olds to questions like

Which box is taller/shorter than it is fat? was that of choosing the tallest/shortest (the X-est) box out of 5 boxes. The authors interpret this as evidence of a "first-clause" strategy on the part of the children. They propose two possible explanations for the children's frequent interpretation of only the first (main) clause of comparative questions:

> The children may be interpreting only the first clause because they have learned that -er than introduces a subordinate clause and, therefore, 'less important' information. Alternatively, the children may have learned that the last clause generally contains the 'less important' information. Children may even be using both strategies at different ages, since evidence for the use of structure and order strategies at different ages has been obtained for temporal sentences. . . . (Townsend and Erb 1975: 275-276)

I believe that there is a better explanation for these "first-clause" responses found by Townsend and Townsend and Erb. Rather than applying a positive strategy to ignore part of a question (either the subordinate or the last clause of the comparative), the child may merely not be fully understanding the comparative structure. He may immaturely understand the comparative adjective in the questions as either a simple adjective or an intensified adjective. This alone would lead the child to choose the X-est rectangle in response to such questions, and it would be consistent with the evidence here that the child uses the comparative to encode 'X(A).' The lack of an adult-like understanding of the comparative structure would render the second clause of a comparison like Which box is taller than it is fat? incomprehensible to the child, so he may just ignore it in responding.

These nominal and intensified uses of the comparative are paralleled in young children's uses of other structures related to the comparative. That is, there is evidence in the literature that children understand other structures with a similar attention to extremes. Wales and Campbell (1970) found that 3- to 5-year-olds responded correctly to positive-pole superlative questions (286 out of 368 trials, extrapolated from Tables I and 3, pp. 397 and 381), choosing the extreme [+Pole] item from an array of 4 objects. (The negative pole responses are not easily interpreted, since there was no counterbalancing of positive and negative pole questions, the negative pole always following the positive-pole question.)

In addition, Berndt and Caramazza (1978) recently report that 4- and 5-year-olds are highly successful in discriminating very X from sort of X by choosing extremes for the former and non-extremes for the latter. However, 3-year-olds tended to choose extremes for both modifiers, very and sort of (p. 289).

In the light of the fact that we find evidence from both comprehension and production that many relational structures are used to refer to

extreme exemplars of the feature in question, we might speculate that these structures are all identical in meaning for the child. This is, in effect, what Wales and Campbell (1970) propose. They suggest that these related structures are initially undifferentiated by the child. A process of differentiation leads to total discrimination of the relational structures, and only later, to the acquisition of the correct overlap conditions. Initially, then, all these structures would encode the concept X(A), with the preference that X refer to extremes rather than non-extremes. This representation allows for the child's correct use of X, very X, and X-est, but also the incorrect uses, in some contexts, of X-er, too X, and sort of X.

I believe the production data reported here support this view to a large extent. The reasons why these structures take on this early meaning for the child are not entirely clear. There is perhaps an interplay between the salience of extreme ends of scales for children and the common role of the proposition 'X(A)' in the linguistic representation of all these forms that encourages the meaning 'A is (very) X' to take precedence over other possible interpretations for these structures. In addition, in the case of comparatives, the frequency in adult speech of truncated comparatives, in which no explicit mention is made of the standard of comparison, makes the relational nature of the comparative less visible to the child. Also the concept of grading, or seriation, necessary for an adult-like understanding of both too X and the comparative, is much more complex semantically and cognitively than the concept of class-inclusion encoded in 'A is X.'

Although 'A is (very) X' appears to be a prominent notion in the child's uses of these structures, and perhaps is the only systematic element in his linguistic representation of these structures, I hesitate to say that these structures all mean the same thing for the child. There are indications that some amount of discrimination is occurring. In particular, not all the structures are used for all the meanings conveyed. For example, the comparative, but not, e.g., too X, is used to encode 'A is X like B'; and the comparative, very X, and X, but not too X, are used for 'X enough.'[3]

It is probable that the child's representations of these relational structures follow the 'missing-feature-plus-haphazard-example theory' proposed by S. Carey (1978) for the acquisition of word meaning. According to her theory, a child may have identical incomplete feature representations for two words, e.g., two polar adjectives such as short and little (both [spatial extent, -Pole]),

but those words are nevertheless discriminated. She argues that a child does not consistently treat short as 'little' in different comprehension tasks because he has accumulated different haphazard examples as part of his knowledge of each of the words.

In the case of relational structures, the incomplete systematic lexical entries for each structure include the proposition 'X(A),' but the haphazard examples of contexts in which the child has heard each of these relational structures keeps them from being identical in meaning.

Conclusion

In conclusion, the data presented here on early semantic errors in the production of the comparative demonstrate that these children use the comparative form, in particular the comparative when marked by -er, to mean 'A is X, like B,' 'A is (very) X,' 'A is too X,' and 'A is X enough.' These various uses of the comparative are best understood in the light of the same children's uses of too X to encode 'very X' and of simple adjectives in cases where X enough would have been the adult form. These data lead me to the conclusion that the various meanings assigned to the comparative in Table I, (b) through (d), all stem from the child's use of the comparative for one meaning, 'A is (very) X.' When the standard marker, than B, is used by the child, the comparative takes on the meaning 'A is (very) X, like B.'

This use of the comparative in production supports H. Clark's (1970) theory, derived mostly from comprehension studies, that compartives are first used nominally. In addition, it is consistent with children's extreme responses described in comprehension studies in the literature, in which the child has been shown to respond to several types of questions by choosing the object that most fully exhibits the characteristic in question. Such a tendency has been reported in studies on the comparative marked by either -er or more, and also for related structures such as the superlative (-est) and the modifiers very and sort of.

It is clear that the proposition 'A is (very) X' plays a prominent role in the child's understanding of many of these relational structures, and it is likely that 'X(A)' is the only systematic element in the child's early linguistic representations of these structures. However, I feel it is improbable that these structures are identical for the child.

In order to investigate this notion further and to more successfully arrive at an appreciation of the child's understanding of these relational structures, researchers must bear this common use of relational structures in mind. Since these forms are all appropriate in many of the same contexts, it is critical that when designing future studies on the comparative and related structures the stimuli somehow allow one to discriminate true comparative responses from non-comparative responses. Only in so doing will we be able to determine the point at which the child no longer treats the comparative as encoding 'A is (very) X' and to discover the child's developmental course from this early use to true understanding of the comparative.

Footnotes

1 A shorter version of this paper was presented at the 1978 Summer Meeting of the Linguistic Society of America, July 28, 1978, held at the University of Illinois, Urbana.

2 I am grateful to Melissa Bowerman for the data from her daughters, Christy and Eva. All other data were collected by the author.

3 One exception is utterance 9 in Table 2, where Rachel used too strong, followed by strong enough. It should be noted that this utterance was produced at 4;2, about six months after the use of too X for 'very X' was most productive.

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